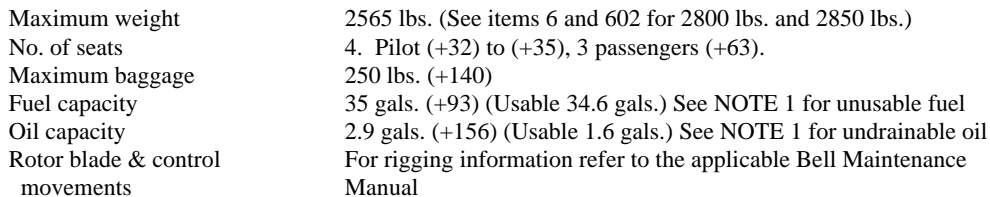


2H1
Revision 13
BELL
47J
47K
47J-2
47J-2A

February 18, 2005

MANUFACTURER Bell Helicopter Textron
Subsidiary of Textron, Inc.
Fort Worth, Texas 76101

Engine	Lycoming VO-435-A1B, -A1D, or -A1E		
Fuel	80/87 minimum grade aviation gasoline		
Engine limits	Maximum r.p.m. 3200 (220 hp.) (See item 602 for 240 hp)		
Carburetor & carburetor settings	Marvel-Schebler MA4-5, Setting 10-3856 or 10-3856-1 or Marvel-Schebler MA4-5AA, Setting 10-4025-1		
Rotor limits			
& operational	Power On (Engine Tach.)		Power Off (Rotor Tach.)
engine speeds	Maximum	3200	Maximum 3700
	Minimum	3000	Minimum 3330
Airspeed limits	Never exceed 105 m.p.h. (91.5 knots) True Ind.		
C.G. range	(+81.4) to (+89.0)		
Empty weight C.G. range	See Figure		



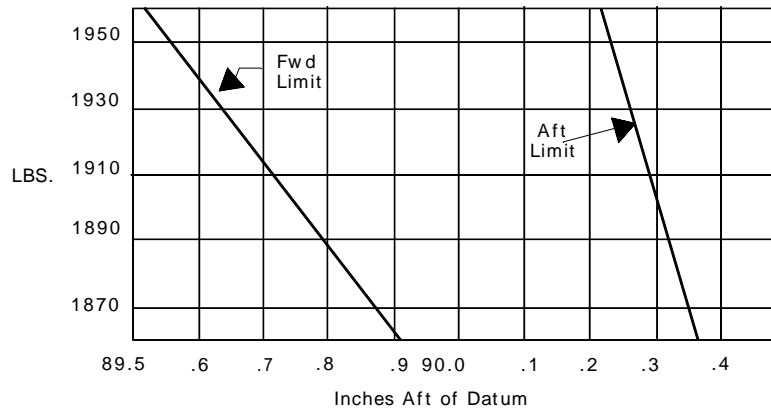
Page No.	1	2	3	4	5	6	7	8	9	10
Rev No.	13	12	12	12	11	11	11	11	13	12

Serial Nos. eligible	1420 thru 1443, 1559 thru 1581; 1712 thru 1803
Required equipment	In addition to the pertinent required basic equipment specified in CAR 6, the following items of equipment must be installed: 1, 2, 3, 4, 5, 101, 102(a), 103, 104(a), 105, 201(a), 301(a), 302(a) or (b), 401(a), 402, 601(a), (b) or (c)

II - Model 47K (Navy HTL-7 - See NOTE 4), 2 PCLH, Approved March 30, 1959

Model 47K is similar to the 47J except for cabin, open engine compartment, oil system, lights, and other miscellaneous items in accordance with Bell Report No. 47-947-067. Military Model HTL-7 is similar to Model 47K except for blind flying instruments. See NOTE 4 for modification required for conversion of Navy HTL-7 to Model 47K.

Engine	Lycoming VO-435-6A or VO-435-A1D	
Fuel	80/87 minimum grade aviation gasoline	
Engine limits	Maximum continuous, (Sea level) 24.6 in.Hg., 3200 rpm (220 hp.) (4300 ft.) 23.3 in.Hg., 3200 rpm (220 hp.) (Straight line manifold pressure variation with altitude) Takeoff (2 minutes) 26.5 in.Hg., 3200 rpm (240 hp.) Marvel-Schebler MA4-5AA, Setting 10-4025-1	
Carburetor & carburetor setting		
Rotor limits & operational engine limits	Power On (Engine Tach.)	Power Off (Rotor Tach.)
	Maximum 3200	Maximum 370
	Minimum 3000	Minimum 333
Airspeed limits	Never exceed 105 m.p.h. (91.5 knots) True Ind. from S.L. to 7000 ft. Above 7000 ft. decrease Vne 4 knots per 1000 ft.	
C.G. range	(+82.0) to (88.5)	
Empty weight C.G. range	See Figure	

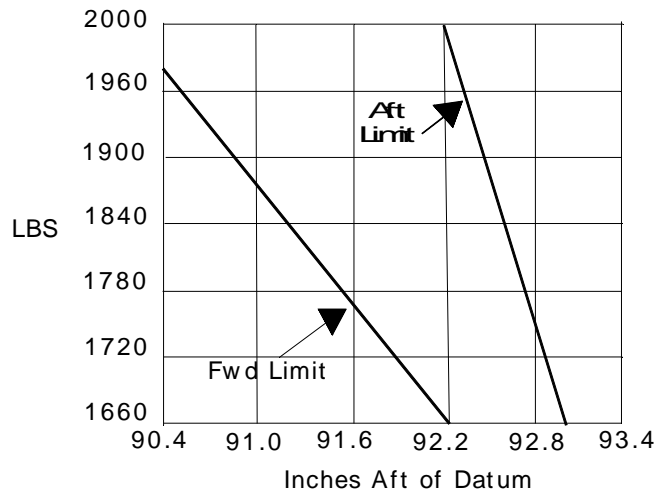


Maximum weight	2565 lbs.
No. of seats	2 (+51.6)
Maximum baggage	For baggage loading refer to the applicable Flight Manual
Fuel capacity	35 gals. (+93) (Usable 34.6 gals.) See NOTE 1 for unusable fuel
Oil capacity	2.7 gals. (+121) (Usable 1.5 gals.) See NOTE 1 for undrainable oil
Rotor blade & control movements	For rigging information refer to applicable Bell Service Manual
Serial Nos. eligible	2114 thru 2131
Required equipment	In addition to the pertinent required basic equipment specified in CAR 6, the following items of equipment must be installed: 1, 2, 3, 4, 5, 101, 102(a), 103, 104(a), 105, 201(a), 301(b), 302(a) or (b), 401(b)

III - Model 47J-2, 4 PCLH, Approved January 14, 1960

Model 47J-2 is similar to the 47J except the basic helicopter incorporates metal main rotor blades, fixed stabilizer, VO-540 engine, blue tinted bubble and windows, and miscellaneous minor improvements. (See Note 7 for conversion of 47J to 47J-2.)

Engine	Lycoming VO-540-B1B or -B1B3 (See Item 610 for 260 hp.)		
Fuel	80/87 minimum grade aviation gasoline		
Engine limits	Maximum continuous, (Sea level) 20.5 in.Hg., 3200 rpm (220 hp.) (9,500 ft.) 19.3 in.Hg., 3200 rpm (220 hp.) (Straight line manifold pressure variation with altitude) Takeoff (2 minutes) 22.0 in.Hg., 3200 rpm (240 hp.)		
Carburetor & carburetor settings	Marvel-Schebler MA-6AA, Setting No. 10-4218		
Rotor limits & operational engine limits	Power On (Engine Tach.)	Power Off (Rotor Tach.)	
	Maximum 3200	Maximum	370
	Minimum 3000	Minimum	333
Airspeed limits	Never exceed 105 m.p.h. (91.5 knots) True Ind.		
C.G. range	(+81.4) to (+89.0)		
Empty weight C.G. range	See Figure		

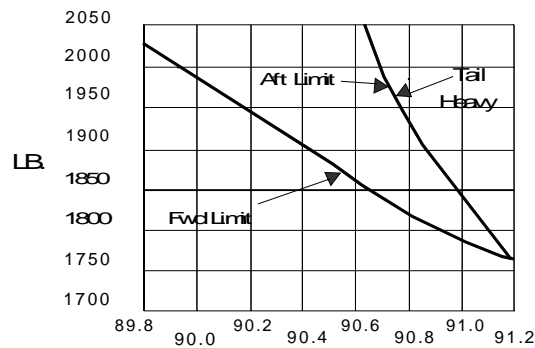


Maximum weight	2850 lbs.	
No. of seats	4. Pilot (+32) to (+35), 3 passengers (+63).	
Maximum baggage	250 lbs. (+140)	
Fuel capacity	48 gals. (+93) (Usable 47.5 gals.) See NOTE 1 for unusable fuel	
Oil capacity	4.3 gals. (+114.5) (Usable 2.5 gals.) See NOTE 1 for undrainable oil	
Rotor blade & control movements	For rigging information refer to the applicable Bell Maintenance Manual	
Serial Nos. eligible	1804 and up and Model 47J converted per Note 7.	
Required equipment	In addition to the pertinent required basic equipment specified in CAR 6, the following items of equipment must be installed: 2, 3, 4, 5, 6(a), 101, 102(b), 103, 104(b), 105, 106, 201(a), 301(a), 302(b), 401(c)	

IV - Model 47J-2A, 4 PCLH, Approved March 4, 1964

Model 47J-2A is similar to the 47J-2 except for increased weight, the installation of collective boost system, addition of main rotor tip weights, a change in the C.G. limits, and miscellaneous minor improvements.

Engine	Lycoming VO-540-B1B3		
Fuel	80/87 minimum grade aviation gasoline		
Engine limits	Maximum continuous, (Sea level) 20.5 in.Hg., 3200 rpm (220 hp.) (9,500 ft.) 19.3 in.Hg., 3200 rpm (220 hp.) (Straight line manifold pressure variation with altitude) Takeoff (2 minutes) 23.6 in.Hg., 3200 rpm (260 hp.) Marvel-Schebler MA-6AA, Setting No. 10-4218		
Carburetor & carburetor settings			
Rotor limits & operational engine limits	Power On (Engine Tach.)	Power Off (Rotor Tach.)	
	Maximum	Maximum	370
	Minimum	Minimum	322
Airspeed limits	S.L. to 3000 ft. Vne = 105 mph (91.5K) Above 3000 ft. decrease Vne 4 mph per 1000 ft.		
C.G. range	(+81.0) to (+87.7)		
Empty weight C.G. range	See Figure, or see page 1-30 of Maintenance Manual		



Maximum weight	2950 lbs.
No. of seats	4. Pilot (+32) to (+35), 3 passengers (+63).
Maximum baggage	250 lbs. (+140)
Fuel capacity	48 gals. (+93) (Usable 47.5 gals.) See NOTE 1 for unusable fuel
Oil capacity	4.3 gals. (+114.5) (Usable 2.5 gals.) See NOTE 1 for undrainable oil
Rotor blade & control movements	For rigging information refer to the applicable Bell Service Manual
Serial Nos. eligible	3108 and up
Required equipment	In addition to the pertinent required basic equipment specified in CAR 6, the following items of equipment must be installed: 2(b), 3, 4, 5, 6(c), 101, 102(b), 103, 104(b), 105(b), 106, 201(a) or 210(e), 301(c), 401(d)

Specifications Pertinent to All Models

Datum	Station 0 (87 in. forward of centerline of mast.)
Leveling means	Leveling lugs lower left hand longeron aft of mast and adjacent cross tube
Certification basis	Type Certificate No. 2H1 (CAR effective January 15, 1951, Amendments 6-1, 6-2, 6-3, 6-4, 6-5, and 6-6) (Structural loading cond. skid landing gear dated 11-12-74)
Production basis	Production Certificate No. 100
Equipment:	A plus (+) or minus (-) sign preceding the weight of an item indicates the net weight change when that item is installed. "- "- indicates "same as preceding model" "_" indicates "does not apply"

Rotors and Rotor Equipment	47J	47K	47J-2	47J-2A
1. Wood rotor blades, Bell 47-110-401 See NOTE 5.	eligible	eligible	—	—
2. Tail rotor, metal, Bell 47-641-074	eligible	--	--	--
3. 2 Stabilizer Bar Dampers, Houde Eng. Div. A13965	4 lbs. (+87)	--	--	--
4. Main rotor counterweights, Bell 47-110-239 and 61-103-120	use actual wt. (+87)	--	--	--
5. Main rotor hub, Bell 47-120-184	91 lbs (+87)	--	--	--
6. (a) Main rotor metal blades, Bell 47-110-250-11 or -21	see Item 6(b)	—	STD	—
(b) Main rotor metal blades kit, Bell 47-706-618, installed in accordance with Service Instruction 316SI. Bell 47-706-618-1	+28 lbs (+83)	—	—	—
or -5 (includes Item 602). When Item 602 is installed on helicopter, Bell 47-706-618-3 or -7 is eligible. When this Item (6(b)) is installed, maximum weight is 2850 lbs. Flight Manual Supplement dated June 18, 1958 required.	+25 lbs (+83)	—	—	—
(c) Main rotor metal blades, Bell 47-110-250-23	—	—	—	—
7. Tail rotor blades 47-641-117 SI428	—	—	use act wt. chg.	STD wt. chg.
Engine and Engine Accessories - Fuel and Oil System				
101. Starter, Eclipse - Pioneer 756-22c	19 lbs (+87)	--	--	--
102. (a) Oil cooler, Bell 47-671-025 (Oil cooler valve included with this cooler)	6 lbs (+80)	--	—	—
(b) Oil cooler, Harrison D-65705	—	—	7 lbs (+80)	--
103. 2 Fan belts, Bell 47-661-041	1 lb. (+68)	--	--	--
104. (a) Carburetor Air Filter, Purolator 51845	1 lb. (+100)	--	—	—
(b) Carburetor Air Filter, Fram X-4079	—	—	2 lbs (+100)	--
105. (a) Hydraulic pump, N.Y. Air Brake 67B025	2 lbs (+89)	--	--	—
(b) Hydraulic pump, Weldon 6010	—	—	—	2 lbs (+90)
106. Long range fuel tank, Bell 47-706-613, installed in accordance with Service Instruction 324SI. Flight Manual Supplement dated May 21, 1959 required.	+8 lbs (+100)	--	STD	--
107. Breather Heater Kit, Bell 47-706-658	—	—	—	1 lb (+55)
108. Primer Kit, Bell 47-606-669	—	—	—	5 lbs (+114)

	47J	47K	47J-2	47J-2A
Landing Gear				
201. (a) 2 Skids, Bell 47-500-022	50 lbs (+74)	--	--	--
(b) Float landing gear (2565 lbs. max. wt.), Bell 47-706-533-1, -3, -5, & -7, installed in accordance with Service Instruction 241SI. Flight Manual Supplement dated March 14, 1957 required.	use act. wt.	—	—	—
(c) Float landing gear (2850 lbs. max. wt.), Bell 47-706-533-9 & 11 installed in accordance with Service Instruction 248SI. Flight Manual Supplement dated March 14, 1957 required.	117 lbs (+76)	—	--	—
(d) High skid gear (2850 lbs. max. wt.), Bell 47-706-628-1 installed in accordance with Service Instruction 340SI (Eligible only when Item 6 is installed). Flight Manual Supplement dated May 8, 1959 required.	+10 lbs. (+79)	—	—	—
(e) Float landing gear (2950 lbs. max. wt.), Bell 47-706-533-11 installed in accordance with Service Instruction 248SI. Flight Manual dated March 4, 1964 required.	—	—	—	117 lbs. (+76)
Electrical and Radio Equipment				
301. (a) Generator, Leece Neville 2591G-12	20 lbs (+87)	—	20 lbs (+87)	—
(b) Generator, Bendix Model 30E16-11C	—	40 lbs (+87)	—	—
(c) Generator, Leece Neville G-001-2591GA	—	—	—	20 lbs (+87)
302. (a) Battery, Yardley 14XHR15V	14 lbs (+76)	--	--	--
(b) Battery, AN3154	28 lbs (+76)	28 lbs (+76)	STD	STD
303. Radio Installation				
(a) AN/ARN-41A (ADF)	—	32 lbs (+69)	—	—
(b) ARC-12 UHF (Command)	—	39 lbs (+150)	—	—
304. Radio, Lear LTR-6 & LTRA-6, installed in accordance with Service Instruction 290SI Bell 47-706-563-1	22 lbs (+90.5)		22 lbs (+90.5)	—
Bell 47-706-563-3	25 lbs (+83.0)	—	25 lbs (+83.0)	—
305. Radio Dare, Bell 47-706-599, installed in accordance with Service instruction 284SI.	27 lbs (+104)	—	27 lbs (+104)	—
306. Radio, King KY-95, Bell 47-706-670	—	—	—	+12.5 lbs (+45)
307. Radio, Narco Mark XII, Bell 47-706-622	—	—	—	+14.7 lbs (+42)
Interior Equipment				
401. (a) "Bell Helicopter Model 47J Appv'd Flight Man." dated Aug. 17, 1956.				
(b) Bell Helicopter Model 47K Appv'd Flight Man." dated Mar. 26, 1959.				
(c) "Bell Helicopter Model 47J-2 Appv'd Flight Man." dated Jan. 13, 1960.				
(d) "Bell Helicopter Model 47J-2A Appv'd Flight Man." dated Mar. 4, 1964.				
402. Anti-fogging fan, Bell 47-733-063	3 lbs (+11)	—	3 lbs (+11)	--

	<u>47J</u>	<u>47K</u>	<u>47J-2</u>	<u>47J-2A</u>
403. (a) Cabin heater, Bell 47-706-556, installed in accordance with Service Instruction 298SI. Flight Manual Supplement dated March 14, 1957 required.	+22 lbs (+92)	—	+22 lbs (+92)	- -
(b) Heater installation, Bell 47-706-632	—	—	—	7 lbs (+70.2)
404. (a) Fire Extinguisher, Bell 47-706-549 installed in accordance with Service Instruction 294SI.	6 lbs (+23)	—	6 lbs (+23)	—
(b) Fire Extinguisher, Bell 47-706-651	—	—	—	6 lbs (+23)
405. Safety belt, seat, Bell 47-706-604, installed in accordance with Service Instruction 305SI.	negligible	—	negligible	—
Miscellaneous Equipment				
601. Fixed ballast (total weight to be determined for each helicopter)				
(a) Bell 47-260-015	(+270)	- -	- -	- -
(b) Bell 47-300-005	(+8.5)	—	(+8.5)	—
(c) Bell 47-260-018	(+304)	- -	- -	- -
(d) Bell 47-314-034	—	(+8)	—	—
602. 2800 lbs. gross weight and 240 hp. kit, Bell 47-706-605, installed in accordance with Service Instruction 278SI Flight Manual dated June 7, 1957 required. Engine limits Maximum continuous, (Sea level) 24.6 in.Hg., 3200 rpm (220 hp.) (4300 ft.) 23.3 in.Hg., 3200 rpm (220 hp.) (Straight line manifold pressure variation with altitude) Takeoff (2 minutes), 26.3 in.Hg., 3200 rpm (240 hp.)	+3 lbs (+42)	—	—	—
603. Night Flying installation, Bell 47-706-515, installed in accordance with Service Instruction 297SI. Flight Manual Supplement dated December 28, 1956 required.	10 lbs (+60.5)	—	10 lbs (+60.5)	- -
604. (a) Rotor brake installation (Manual operation), Bell 47-706-538, installed in accordance with Service Instruction 289SI. Flight Manual Supplement dated February 1, 1957 required.	7 lbs (+76)	—	7 lbs (+76)	- -
(b) Rotor brake installation (Power operation), Bell 47-706-587, installed in accordance with Service Instruction 255SI. Flight Manual Supplement dated July 30, 1958, required.	9 lbs (+78)	—	9 lbs (+78)	—
605. Litter installation, Bell 47-706-517, installation in accordance with Service Instruction 239SI. Flight Manual Supplement dated February 1, 1957 required. Including litter Less litter	+59 lbs (+58) +22 lbs (+55)	— —	+59 lbs (+58) +22 lbs (+55)	- - - -
606. Deleted				

	47J	47K	47J-2	47J-2A
607. Hoist installation (Eligible only when helicopter is certified under CAR 8. Hoist must be rendered inoperative when helicopter is used under standard certificate), Bell 47-706-513, installed in accordance with Service Instruction 292SI. Flight Manual Supplement dated March 14, 1957, required.	+64 lbs (+65)	—	+64 lbs (+65)	- -
608. Cargo deck, Bell 47-706-554, installed in accordance with Service Instruction 296SI.	27 lbs (+56)	—	27 lbs (+56)	—
609. Cabin step, Bell 47-369-029, installed in accordance with Service Instruction 327SI.	negligible	—	negligible	—
610. 260 takeoff horsepower kit. Bell Kit No. 47-1603-1 installed in accordance with Service Instruction 386SI. Bell Helicopter Model 47J-2 Approved Flight Manual dated January 13, 1960 (Item 401c), revised March 21, 1961 required. Engine, Lycoming VO-540-B1B3 Engine limits Maximum continuous, (sea level) 20.5 in.Hg., 3200 rpm (220 hp.) (9500 ft.) 19.3 in.Hg., 3200 rpm (220 hp.) (Straight line manifold pressure variation with altitude) Takeoff (2 minutes), 23.6 in.Hg., 3200 rpm (260 hp.) Transmission Bell, P/N 47-620-600-25, required with this rating. (Included in kit)	—	—	+15 lbs (+87)	—
611. Door ejection, Bell 47-706-748 installed in accordance with Service Instruction 317SI.	1 lb (+28)	—	1 lb (+28)	- -
612. Beacon Installation, Bell 47-706-624 instld. in accordance with Serv. Inst. 351SI.	5 lbs (+43.5)	—	5 lbs (+43.5)	- -

NOTE 1. Current weight and balance report, including list of equipment included in certificated weight empty and loading instructions, when necessary, must be in each helicopter at the time of original certification and at all times thereafter. In order to obtain the most consistent weight and balance results, all model helicopters should be weighed on hjackpoints rather than on skids or floats. The applicable Bell Erection and Maintenance Manual contains complete information on this subject.

The certified weight empty and corresponding center of gravity location must include the following:

Model 47J -	Unusable fuel (Included in fuel capacity)	2 lbs. (+100)
	Undrainable oil (Included in oil capacity)	2 lbs. (+100)
Model 47K -	Unusable fuel (Included in fuel capacity)	2 lbs. (+100)
	Undrainable oil (Included in oil capacity)	2 lbs. (+100)
Model 47J-2 -	Unusable fuel (Included in fuel capacity)	2 lbs. (+100)
	Undrainable oil (Included in oil capacity)	2 lbs. (+100)
Model 47J-2A -	Unusable fuel (Included in fuel capacity)	2 lbs. (+100)
	Undrainable oil (Included in oil capacity)	2 lbs. (+100)

NOTE 2. This helicopter shall be operated in compliance with the operating limitations specified in the FAA Approved Helicopter Flight Manual.

NOTE 3. Information essential to the proper maintenance of the helicopter including retirement time of critical parts is contained in the applicable Bell Maintenance Manual provided with each helicopter. These values of retirement or service life cannot be increased without FAA Engineering Approval. See NOTE 6.

NOTE 4. Prior to civil Certification, Navy Model HTL-7 Helicopter must be modified in accordance with Bell Report No. 47-099-013.

NOTE 5. Wooden main rotor blades 47-110-401-13 are not eligible for use. See Bell Service Bulletin No. 47-04-1-74-1.

NOTE 6. Section 1 of the pertinent Model Maintenance and Overhaul Information Manual includes the following information. These replacement or service life may be superseded by AD's. See equipment listing for eligibility of certain items on the models.

ITEM	PART NUMBER	REPLACE AT Hours
<u>MAIN ROTOR SYSTEM</u>		
Main Rotor blade (Metal)	47-110-250-11 or -21	5000
Counterweight Bracket	47-110-287-9	200
Drag Brace	47-110-301-1	2500
Drag Brace	47-110-372-1	2500
Pitch Change Horn	47-120-126-5	5000
Main Rotor Yoke	47-120-177-1	2500
(If used at any time with 47J & K wood blades)		
Main Rotor Yoke	47-120-177-1	5000
(With metal blades only)		
Main Rotor Grips	47-120-252-5	300
Main Rotor Grips	47-120-252-1, -7, -11, 113, -115	1200
Gimbal Ring	47-120-014-1 through -21	1200
Gimbal Ring	47-120-014-23	4800
<u>CONTROL SYSTEM</u>		
Collective Sleeve Assembly	47-150-117-5, -13, or -21	5000
Scissor Lever	47-150-249-1 and -5	5000
Bellcrank	47-724-097-7, or -9	2500
(If used at any time with wood blades)		
Bellcrank (With metal blades only)	47-724-097-7, or -9	5000
Lateral Torque Tube	47-725-852-1	1200
<u>TAIL ROTOR SYSTEM</u>		
Tail Rotor Extension Tube	47-640-055-3 600	
Tail Rotor Pitch Change	47-640-069-1 and -3	600
Shaft Bearings		
Tail Rotor Blades	47-642-102	AD 80-10-4
Tail Rotor Blades	47-642-117-1	2500
Tail Rotor Yoke	47-641-126-5	2500
<u>MISCELLANEOUS</u>		
Fan Belts (Matched Sets)	47-661-041 (All dash numbers)	600
Transmission Shear Screw	47-620-485-1 600	
	47-620-485-9	1200
Engine Mount	47-612-171 (All dash numbers)	2500
Engine Mount	47-612-135-147	
	At 2565 pounds maximum gross weight	2500
	At 2800 to 2850 pounds maximum gross weight	600

NOTE

A 47-612-135-147 engine mount which has been operated at 2565 pounds maximum gross weight for less than 900 hours can continue in service, after installation of 2850 pounds gross weight kit, for not more than 600 additional hours, provided total service time does not exceed 900 hours.

NOTE 7. Bell Model 47J helicopters may be converted to Model 47J-2 in accordance with Service Instruction No. 350 S.I.

-END-